

WHAT IS CLAIMED IS:

1. An industrial caster wheel assembly, comprising:
  - a plurality of side plates, each side plate having an inside wall;
  - a housing positioned between the inside walls of at least two of the plurality of the side plates;
  - a first axle supported by at least two of the plurality of side plates and extending through the housing, the housing rotatable relative to the at least two side plates around the first axle;
  - a second axle supported by at least two of the plurality of side plates and extending through the housing;
  - an elastomeric support member positioned in the housing adjacent to the first and second axles, wherein, when the housing rotates relative to the at least two side plates about the first axle, the second axle compresses the elastomeric support member; and
  - an adjustment member that can be placed in contact with the second axle to press the second axle at least indirectly against the elastomeric support member.
2. The industrial caster wheel assembly of claim 1, further comprising a base member supported by the housing.
3. The industrial caster wheel assembly of claim 2, wherein an edge of the plurality of side plates provide a deflection stop when in contact with the base member.
4. The industrial caster wheel assembly of claim 1, further comprising:
  - a wheel arranged at a respective side of at least two of the plurality of side plates; and
  - a third axle that supports the wheel, the wheel rotatable around a first axis, the third axle supported by the at least two of the plurality of side plate.
5. The industrial caster wheel assembly of claim 4, further comprising a plurality of holes formed in the at least two of the plurality of side plates usable to adjust a position of the third axle relative to the elastomeric member.
6. The industrial caster wheel assembly of claim 1, further comprising a tab positioned on an inside wall of the housing that restricts movement of the elastomeric support member.

7. The industrial caster wheel assembly of claim 1, further comprising a plurality of holes formed in the at least two of the plurality of side plates usable to adjust a position of the second axle based on a size of the elastomeric support member.

8. The industrial caster wheel assembly of claim 1, wherein each side edge of the plurality of side plates is curved.

9. The industrial caster wheel assembly of claim 1, further comprising a pivot bushing extending between the side plates and surrounding the first axle within the housing.

10. The industrial caster wheel assembly of claim 1, further comprising a rigid plate positioned between the second axle and the elastomeric support member, wherein the second axle compresses the elastomeric support member by contacting the rigid plate.

11. The industrial caster wheel assembly of claim 10, wherein the second axle compresses the elastomeric support member by contacting the rigid plate at approximately the midpoint of a first dimension of the elastomeric support member.

12. The industrial caster wheel assembly of claim 1, wherein the geometry of the elastomeric support member is selected to obtain a desired deflection response.

13. The industrial caster wheel assembly of claim 1, wherein a geometry of the elastomeric support member is selected to achieve a range of pressure from 50 psi to 900 psi.

14. The industrial caster wheel assembly of claim 1, wherein the elastomeric support member has a width-to-height ratio of about 0.5 to about 2.0.

15. The industrial caster wheel assembly of claim 1, wherein at least one of a hardness and a compression modulus of the elastomeric support member is selected to obtain a desired deflection response.

16. The industrial caster wheel assembly of claim 1, wherein the hardness of the elastomeric support member ranges from about 50 Shore A to about 70 Shore D.

17. The industrial caster wheel assembly of claim 1, wherein the compression modulus of the elastomeric support member ranges from about 650 psi to about 5,000 psi.

18. The industrial caster wheel assembly of claim 1, wherein a Bayshore Rebound of the elastomeric support member is about 20% and about 80%.

19. The industrial caster wheel assembly of claim 1, wherein a strain of the elastomeric support member while under compression is between about 5% to about 50%.

20. The industrial caster wheel assembly of claim 1, wherein, when the adjustment member moves the second axle in a first direction, the second axle compresses the elastomeric support member.

21. The industrial caster wheel assembly of claim 1, wherein, when the adjustment member moves the second axle, the plurality of side plates move relative to the housing

22. The industrial caster wheel assembly of claim 21, wherein, when the adjustment member is moved in a first direction, the plurality of side plates move relative to the housing to reduce a height of the industrial caster wheel assembly.

23. The industrial caster wheel assembly of claim 1, wherein the adjustment member is a threaded member that is threaded into at least one of a threaded hole in the housing and a threaded member attached to the housing.

24. The industrial caster wheel assembly of claim 1, further comprising:  
a second adjustment member that can be placed in contact with the first axle to adjust a position of the first axle relative a center of the housing.

25. The industrial caster wheel assembly of claim 24, wherein, when the second adjustment member moves the first axle, the plurality of side plates move relative to the housing.

26. The industrial caster wheel assembly of claim 24, wherein, when the second adjustment member is moved in a first direction, the plurality of side plates move relative to the housing to increase a height of the industrial caster wheel assembly.

27. The industrial caster wheel assembly of claim 24, wherein, when the second adjustment member is moved in a first direction, the plurality of side plates move relative to the housing to decrease a height of the industrial caster wheel assembly and when the second adjustment member is moved in a second direction, the plurality of side plates move relative to the housing to increase a height of the industrial caster wheel assembly.

28. An industrial caster wheel assembly, comprising:  
a plurality of side plates, each side plate having an inside wall;

a housing positioned between the inside walls of at least two of the plurality of the side plates;

a first axle supported by at least two of the plurality of side plates and extending through the housing, the housing rotatable relative to the at least two side plates around the first axle;

a second axle supported by at least two of the plurality of side plates and extending through the housing;

an elastomeric support member positioned in the housing adjacent to the first and second axles, wherein, when the housing rotates relative to the at least two side plates about the first axle, the second axle compresses the elastomeric support member; and

at least one adjustment member for at least one of the first and second axles.

29. The industrial caster wheel assembly of claim 28, wherein the at least one adjustment member comprises a first adjustment member usable to move the second axle in a first direction to compress the elastomeric support member.

30. The industrial caster wheel assembly of claim 29, wherein the at least one adjustment member further comprises a second adjustment member usable to adjust a position of the second axle relative to a center of the housing.

31. The industrial caster wheel assembly of claim 28, wherein the at least one adjustment member includes a first adjustment member that can be placed in contact with the first axle and a second adjustment member that can be placed in contact with the second axle.

32. The industrial caster wheel assembly of claim 31, wherein, when the second adjustment member is moved in a first direction, the plurality of side plates move relative to the housing to decrease a height of the industrial caster wheel assembly and when the second adjustment member is moved in a second direction, the plurality of side plates move relative to the housing to increase a height of the industrial caster wheel assembly.

33. The industrial caster wheel assembly of claim 28, wherein the at least one adjustment member comprises a second adjustment member usable to adjust a position of the second axle relative to a center of the housing.